WHAT IS CLAIMED IS:

1) A method of detecting a one lung ventilation situation in a human subject, the method comprising:

a) electronically detecting indigenous lung sounds emanating from a region of the body with an acoustic sensors; and

b) generating an output indicative of the one lung ventilation situation by processing said detected indigenous lung sounds.

2) The method of claim 1 wherein said detecting includes receiving a plurality of electrical signals from a plurality of acoustic sensors, wherein at least one said acoustic sensor is disposed adjacent to a chest region of the body.

3) The method of claim 1 wherein said detecting includes receiving a plurality of electrical signals from a plurality of acoustic sensors, wherein at least one said acoustic sensor is disposed adjacent to a back region of the body.

4) The method of claim 1 wherein said detecting includes receiving a plurality of electrical signals from a plurality of acoustic sensors, and said acoustic sensors are disposed only adjacent to regions of the body selected from the group consisting of a chest region of the body and a back region of the body.

5) The method of claims 1 wherein said detecting includes receiving a plurality of electrical signals from a plurality of acoustic sensors, and said processing includes computing a parameter indicative of a relation between a said electrical signal and at least one of a history of said electrical signal and a future behavior of said electrical signal.

6) The method of claim 3 wherein said processing includes computing a parameter indicative of a relation between a said electrical signal and at least one of a history of said electrical signal and a future behavior of said electrical signal.

7) The method of claims 5 or 6 wherein said processing includes computing a parameter indicative of a relation between a said electrical signal during a first time window and a said electrical signal during a second time window, wherein said first and second time windows overlap.

8) The method of claim 7 wherein said first and second time windows overlap by at least 1 second.

9) The method of claim 8 wherein said first and second time windows overlap by at least 2 seconds.

10) The method of claim 1 wherein said detecting includes receiving a plurality of electrical signals from a plurality of acoustic sensors, and said processing includes computing a parameter indicative of a relation between a first said electrical signal received from a first said acoustic sensor and at least one of a history of said first electrical signal received from said first acoustic sensor and a future behavior of said first electrical signal received from said first acoustic sensor.

11) The method of claim 10 wherein said first acoustic sensor is disposed adjacent to a chest region of the body.

12) The method of claim 10 wherein said first acoustic sensor is disposed adjacent to a back region of the body.

13) The method of claims 5 or 10 wherein said relation is indicative of a conditional probability relation.

14) The method of claim 13 wherein said processing includes computing a parameter related to a covariance matrix of said conditional probability relation.

15) The method of claim 13 wherein said processing includes computing at least one eigenvalue of said covariance matrix.

16) The method of claim 15 wherein a lower magnitude of one said eigenvalue is indicative of the one lung ventilation situation.

17) The method of claim 1 wherein said processing includes obtaining a parameter indicative of at least one type of statistics selected from the group consisting of spatial statistics and temporal statistics of said indigenous lung sounds.

18) The method of claim 17 wherein a deviation in said statistics is indicative of a change in an intubation status.

19) The method of claim 1 wherein said processing includes determining a number of distributed random sources of said indigenous lung sounds.

20) The method of claim 19 wherein said processing includes determining only a number of distributed random sources of said indigenous lung sounds.

21) The method of claim 1 wherein said processing includes determining a source scattering parameter indicative of a scattering of noise sources.

22) The method of claim 1 wherein said detecting includes generating an electrical signal, and said processing includes computing an estimate of an autoregressive moving average (ARMA) function of said electronic signal.

23) The method of claim 1 wherein said detecting includes generating an electrical signal, and said processing includes computing an estimate an autoregressive function of said electronic signal.

24) A method of detecting a one lung ventilation situation in a human subject, the method comprising:

a) electronically detecting noise including indigenous lung sounds emanating from a region of the body; and

b) generating an output indicative of the one lung ventilation situation by processing said detected indigenous lung sounds in way that is insensitive to uncancelled, random background noise of a loudness associated with an operating room.

25) The method of claim 24 wherein said uncancelled random background noise includes at least 70 decibels of noise.

26) The method of claim 24 wherein said stage of detecting include detecting noise other than lung sounds, and said stage of processing includes using an adaptive filtering technique to filter noise.

27) A method comprising:

a) selecting a population of human subjects sufficiently large to give statistically significant results; and

b) identifying a one lung intubation situation in a subpopulation of said population,

wherein at most 9.6% of said identifications are misidentifications.

28) A method comprising:

a) selecting a population of human subjects sufficiently large to give statistically significant results; and

b) identifying a one lung intubation situation in a subpopulation of said population,

wherein at most 4.8% of said identifications are false positive identifications, and at most 4.8% of said identifications are false negative identifications.

29) A method comprising:

a) selecting a population of human subjects sufficiently large to give statistically significant results; and

b) identifying a one lung intubation situation in a subpopulation of said population,

wherein at most 9% of said identifications are false positive identifications, and at most 2% of said identifications are false negative identifications.

30) A device for detecting a one lung ventilation situation in a subject, the device comprising:

a) a plurality of acoustic sensors adapted to electronically detect indigenous lung sounds emanating from a region of the body; and

b) a processing unit adapted to process an electronic signal received from said acoustic sensors and to generate an output indicative of a one lung ventilation situation.

31) The device of claim 30 wherein said processing unit is adapted such that at most 9% of said identification are false positive identifications, and at most 2% of said identifications are false negative identifications.

32) The device of claim 30 wherein said processing unit is adapted such that at most 4.5% of said identification are false positive identifications, and at most 4.5% of said identifications are false negative identifications.

33) The device of claim 30 wherein said processing unit is adapted to said output in way that is insensitive to uncancelled, random background noise of a loudness associated with an operating room.